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# Association of College & University Telecommunication Administrators

VOLUME 14, NUMBER 4

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## PARTY LINE

—Ruth Michalecki, Nebraska

The Seminar on "AUTOMATED TRAFFIC ENGINEERING" held in Dallas, Texas last week was very good. I am sorry that we didn't have better attendance, and I still haven't totally figured out the reason why, but for those who did attend, the consensus was that it was well worth their time. One of the participants figured they saved about \$1500 per month by using FX lines instead of WATS to a specific city, while several discovered they could realize a significant savings by simply using the correct combination of WATS bands. The software optimization program lets you look at various options for handling your long distance services, such as WATS, FX, and OCCs. You input the traffic data and the rates for your area and you select the grade of service options you want to see (it will show you four grades of service -- your choice), and will select the optimal choice for your network. Best of all, once you have entered all the rates for your area, they can be saved on the disc and unless they change, you do not have to enter them again. What a time-saver! When the program arrives at the optimal choice, it displays the information on a single screen and you can print out the data on a single page, again showing the line requirements for the selected four grades of service. The commands are in plain English terms, very easy to return to the menu and the optimization or number crunching process goes pretty fast (under 5 minutes). All of the participants were able to get hands-on experience with the program. Chris Moore from Oregon State University told me she felt it was one of the more useful and practical seminars she had attended for a long time. That seemed to be the general feeling of everyone attending the seminar.

The first day's session was devoted to understanding the concepts and theories of traffic engineering, with participants working with the rate tables and various formulas manually. Kevin Johnson of Walsh-Lowe and Associates conducted this session and it didn't take long to discover he was speaking from the cockpit, not the text-book. He shared many practical and realistic solutions to problems in networking with us and helped in clearing up some of the mystique of traffic engineering. Kevin caught our interest when he told us about an offering of the telco's called "Remote Call Forwarding"; a service his consulting group uses regularly and one his financial clients find many uses for. Remote Call Forwarding is getting a local telephone number in a remote or distant city, with no physical appearance of the number. Callers dialing that number to reach your organization are forwarded via DDD to your main number, giving the impression that you have a local office. The cost of this service is \$16.00 per month for the number plus the DDD call cost. You could easily see our members thinking of applications for their campus. Apparently the environment Kevin is in deals fairly heavy with by-pass opportunities and it was interesting to hear first-hand

some of the problems associated with this issue. At any rate, he did an excellent job, covering a subject that is difficult to make interesting, and yet he managed to do that very well.

The second day was devoted to the automated program. ACUTA is grateful to Randy Manuel, President of Telecommunications Software, Inc., for his effort at developing a program that incorporated some of his basic traffic optimization designs to run on a personal computer. Randy has been involved in traffic optimization programs for over twelve years, first getting interested in the subject when he was asked to provide optimization studies for GTE and Bell Operating Companies in response to requests from their customers. He has a traffic optimization program that he runs on his mainframe computer for his clients that makes the computer look like the PBX and actually simulates their call activity. He has run our traffic and optimized our network achieving very significant savings for us. Randy shared his expertise with the participants during the second day's session, covering the use of software as a tool for managing systems and sharing some misunderstood concepts and myths about traffic engineering. We had a few bugs with the computers at the first session, but the problems were quickly corrected, thanks to the technician we brought to the seminar.

ERICSSON COMMUNICATIONS sponsored both receptions and we enjoyed meeting some of their people from the Texas area. (Next time you see Valerie Jaffee, ask her about Boston...) Several of our members won Ericsson telephone sets at the reception and we viewed an excellent film covering the challenges of installing a telephone system in Saudi Arabia. One can't help but wonder about our information age when you see a pay-phone installed in the desert in Saudi, with nothing else around for as far as the eye can see.

Our thanks also to **NORTHERN TELECOM** for their contribution to the rental fee of the IBM Personal Computers. It really helped! We are sorry that prior commitments prevented our friend Mike Molett from spending some time with us.

We were pleased to have the opportunity to use the ATT-IS Personal Computer at our seminar. In response to my call for help, the Omaha, Nebraska office of ATT-IS located 7 of their 6300 PC's and shipped them to Dallas. The airlines fouled up the shipping schedule and with a lot of work on the part of ATT-IS, both in Omaha and in Dallas, they were finally located and arrived on time for the seminar. Our sincere thanks to **ATT-IS** for the super effort they made with literally no notice. The participants getting to use the ATT-IS 6300 PC were impressed at the ease of use and the far greater speed as compared to the IBM we were using.

Enough on the Dallas Seminar. I would be interested in knowing if anyone not attending would be interested in a repeat seminar. Give me a call or drop me a note. Thanks!

PARTY LINE, Continued:

Plans are moving forward rapidly for the annual conference in Banff Springs, Canada---and our enthusiasm is riding high. Without a doubt, it looks like it will be our best conference ever. We were able to get all our first-choice speakers for the sessions; the days are filled with timely topics of great interest and the late afternoons and evenings are filled with planned sight-seeing activities, dinners and entertainment. Do you realize this is one conference where **ALL** the meals are included for the entire conference, starting with the opening night's reception. What a bargain! It is important that you fill out the information sheet and return to Mal Reader so you can receive the information on the spouse program and so Mal can provide the meeting and break-out requirements to the hotel. It will also help Mal and his staff meet your needs with transportation and/or other information you want. Be sure to get your reservations in early. We expect a record-breaking number of attendees and we would hate to see any of our members miss the conference because the space was already taken.

In a recent article in **THE OFFICE**, April issue, entitled "Telecommunications in the New Environment", the author makes several observations that I have been making to the attendees at the seminars Steve Merrill and I have been conducting for NACAS. It's always gratifying to see that someone else shares your opinion, even if you don't know them or vice-versa. Let me quote a paragraph or two from this article.

"Managers responsible for their company's telephone systems never until recently involved themselves with functions considered essential to a manager's role, such as planning, designing, selecting, or upgrading systems under their charge. This was caused by the monopolistic and self-sufficient phone company: ATT actually shielded its users from the real operating world."

Unlike IBM, which has always taught customers data processing principles and management theory, the Bell System performed most of the planning and design work for its customers. Telephone technology didn't change very fast, and the Bell System provided applications engineers and telephone equipment to steer users into the future. In effect, the company told users how to manage their phone systems, prompting corporate telecommunications managers to take for granted their reliable end-to-end phone service.

Several factors have drastically changed this environment over the past few years. Rapid advances in semiconductor, microprocessor, and signal transmission technologies were making the nation's telephone system obsolete. Fortunately for ATT, many planners and thinkers saw the need to modernize the nation's communications systems. They realized a country migrating from an industrial to an information-based economy requires the most modern efficient networks it can afford. Recent administrations helped by fostering government deregulation and market competition in many areas, including communications. As a result, the 1956 consent decree was modified to allow ATT to enter the computer market on January 1, 1984. The U.S. communications market is now theoretically able to become more competitive.

This leaves the telecommunications managers responsible for their company telephone systems and networks for the first time. They must learn a myriad of new technologies, planning and engineering telephone service in an era of rising costs, selecting new systems from a diversity of vendors, and maintaining systems in a multivendor service environment. Besides the industry changes, many corporations are awakening to the greater role telecommunications must play in corporate strategy and in increasing worker productivity. Telecom managers today enjoy greater

contact with people inside and outside their organizations. As a result they must balance technical and managerial skills more effectively than ever before."

The author goes on to suggest that in order to deal effectively with the new environment, the telecom managers must take certain steps.

1) Build a viable telecom staff. The major problems facing telecom professionals center around personnel, not technology. (This is not news to those of us in the university arena---it is a fact of life).

2) Educate yourself! The new environment offers tremendous opportunities, but also great risks.

3) Learn to communicate effectively with top management. To proceed with any plan, you must win approval from the top.

4) Get the most from vendor products and services. Learn to negotiate equipment and service to your best advantage---refuse to accept mediocre or sub-standard performance or products.

5) Formalize strategic plans for five and ten years down the road. Telecom Managers must present their departments' objectives to management and tie them to the institutional goals.

The article was written by staff members (Anne Beltz, Lance Lindstrom, Carol Skvara and Rose Valenta) from **DATAPRO RESEARCH CORP.** The complete article is in the April 1985 issue of **THE OFFICE**, pages 136-140.

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At the ComNet '85 show in Washington, DC (Jan 28-31), one of the more interesting sessions focused on telecom staffing and salaries. Roy Einreinhofer of Bremer Assoc., Boston, offered the following suggestions for telecom managers looking for staff. 1) Give serious consideration to re-training the older employees. 2) Be sure you have clear and comprehensive definitions of telecom staff positions and duties. 3) Follow through carefully on checking references presented by prospective employees. Prospects occasionally falsify educational and professional records. The second part of his presentation included typical salary figures for telecom staff at various levels. This really generated a lot of discussion and furious note-taking. Trends in telecom career included:

-----increased desirability of formal education;  
-----increasing demand for persons with voice and data experience;  
-----concentration of the highest paid jobs in New York, Los Angeles, Chicago, San Francisco and Boston;  
-----a continuing upward trend in telecom jobs at all levels (current salaries are up substantially from 1981).

Among the salaries quoted: Telecommunications Directors = \$60,500 New York area; \$56,600 elsewhere. Communications Managers = \$45,000 New York area; \$42,100 elsewhere. Junior Voice Analyst = \$28,700 New York area; \$25,300 elsewhere.

At the Annual Conference in Banff Springs, Canada, Joe Massey will address some of the staffing and salary issues. It should prove to be a popular session. Some of our members have recently undergone some in-depth reviews of staffing and organizational structure changes at their university. I plan on interviewing them for a future newsletter article and hope to be able to share some of the job-descriptions they developed as a result of their reviews. It should include a salary range that could be adapted to each of our local job markets. This issue is one that I am

PARTY LINE, Continued:

asked about continually and is one I know we are all struggling with. It was interesting to me to discover we aren't the only ones interested in the subject. The session in Washington DC was standing room only....

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One of the more difficult tasks a telecom director has to contend with is the physical plant (cable/wiring) issues dealing with either voice or data or both. I can't tell you how many times I have attended meetings on this subject and hear something like "we can pull twisted pair and coax in the tunnels, using student help and accomplish the job with very little outlay of cash..." I always shudder when I hear such statements. Because it such a vital part of our responsibility, we are conducting several sessions on cable/wiring plants at the annual conference this year. However, I run across an article in the April 17th issue of **MISWeek**, page 37, entitled "Installing Cable---It's Not Simple", author Maureen Nevin Duffy. I am going to quote a few excerpts from her article while awaiting permission to reprint it in full. It has some sound advice...

...."When you install broadband, there's a lot of do's and don'ts in the installation, noted Marvin W. Rahm, a telecommunications consultant responsible for the design of all cable installations at Dow Chemical. Rahm asserts that, in the majority of systems put in, the problem is not in the network; it's in the installation. He said universities in particular get into trouble because they must enter these systems in a package-deal environment. They usually order a contractor to "pull" a bunch of coax first, with the intention that the university will bring in the experts later to put in the splices and connectors, a method that is fraught with disaster. Procedures taken for granted when installing wiring in the past can cause calamity with today's technology. Rahm said you just do not take a piece of half-inch coax rigid cable and just start putting it around 90-degree bends.... You must avoid these situations or carefully check afterwards for "ripples". Even before installation cable should be checked for pinholes, kinks and other damage which can happen during shipping and/or manufacturing. You need a competent staff, the right tools and adequate testing procedures to avoid these problems. At Dow training is vital, with everyone involved undergoing an extensive two-week training session. Testing the equipment to be used in the cabling system is often overlooked and he advises a minimum investment of \$10,000 for test equipment such as an oscilloscope, and volt-meter. You should use a time-domain reflector for testing cable signal and installers should check for leaks with an RF "sniffer". Documentation is a must---detailing every level, every amp; measured for input, output, forward, reverse. All important because you will use those measurements as a reference for any future problems. He also cautions us to check first with the State Fire Marshall for any limitations on the numbers and types of cable allowed in ceilings where air ducts are present. Although this article deals mainly with coax cable, I believe some of the same cautions apply equally to twisted pairs....

\* \* \* \* \*

Has anyone received the new InterLATA rates for Intrastate 800 and/or WATS? Our new rates went into effect April 1st and what an April Fool's gift we got! By the time we finished the number crunching on our very large 800 network, the best we could reach was about a 67% increase. The intrastate outgoing network we share with the state was hit pretty hard also, although not as bad as the 800 service. By the time the hours of usage are split between the inter-LATA (ATTCOM) and the intraLATA carrier, we are never able to reach the lower rates steps we formerly reached with great ease. In my way of thinking, we are getting double-dipped. In addition we are starting to get

termination charges, etc., on our intrastate FX lines from the operating company where the FX terminates that is easily equalling the total costs of the FX, thus doubling our costs for the line. Getting harder all the time to manage a large network such as ours and realize significant savings. Less and less margins between our network costs and DDD, and not by accident either..... Certainly makes the alternatives look better and better.

\* \* \* \* \*



...Scenes of Banff Springs National Park and a view from the Banff Springs Hotel.  
Banff Springs, Alberta Canada.....



## Pay-As-You-Talk:

### Fad or Fortune?

Victor J. Toth

Have you considered owning and installing your own pay telephone? Or, more likely, as a telecommunications manager or consultant, have you had an occasion to negotiate with the local telephone company for public or semi-public telephones to be installed at your corporate plant or offices or throughout your client's premises for use by employees, patrons or guests? If so, the experience was probably aggravating and the results less than satisfactory.

As we have come to expect since Computer II and the MFJ, nothing is either certain or sacred any longer insofar as the established telephone business is concerned. And the telephone companies' self-proclaimed monopoly over pay telephone service is no exception. Competition in the pay telephone market has just been sanctioned by at least one state regulatory agency, and within three years up to a million new customer coin telephones (CCTs) are likely to be placed into service. So why not consider installing CCTs as cost saving or even profitable station adjuncts to in-house PBX systems, such as in hotels, dormitories, multi-tenant complexes or large corporate installations susceptible to widespread employee personal use or abuse, or simply as an all purpose telephone?

It has taken nearly fifteen years since the landmark Carterfone decision for someone to challenge the phone company's tariff prohibitions or policies against owning or interconnecting customer provided coin telephones. And had it not been for the tenacity of Tonka Tools--the unsuspecting manufacturer of the Tonk-A-Phone--the BOCs, ATT Communications and MCI might have succeeded in perpetuating indefinitely the myth that pay telephones can only be provided by regulated common carriers. (Worse yet, the BOCs would have us believe that coin telephones can only be provided by local exchange carriers.)

Two years ago Tonka recognized a need for an inexpensive desktop coin instrument among proprietors of small businesses whose telephones were frequently "borrowed" (or abused) by employees and patrons. Once installed, Tonka's products were invariably disconnected as soon as they were discovered by telco personnel, often with a very heated confrontation between the telco and the customer. The reasons given were that CCTs were (1) prohibited by resale restrictions in the local tariffs; (2) prohibited under the FCC's CPE terminal equipment registration program; and (3) the provision of coin service is a franchised activity reserved exclusively to the local exchange carrier.

Tonka and its customers reacted by instituting numerous proceedings before state regulators and by applying for CPE registration with the FCC. Meanwhile, the BOCs with one exception--Northwestern Bell--launched a nationwide campaign, assisted by the new Bell Communications Research organization, to ferret out allegedly illegal CCT connections.

There are two major competitive interests vying for the pay telephone market. First, there are the manufacturers of new and innovative pay telephone products whose ambition is simply to sell the instruments in new markets. The manufacturers are

seeking to recover from a dramatic slump in sales attributed to deregulation and the attendant cutback in new pay telephone procurements by most of the established telephone operating industry.

It is the manufacturers' view that CCT competition will result in a phenomenal increase in the number of pay telephones accessible to employees, guests, patrons and the public generally. Individuals and private concerns will purchase and install new coin and coinless pay telephone products to be installed behind existing systems or in locations otherwise ineligible for, or not conducive to, conventional pay telephones as currently offered under standard telephone company terms and practices. The manufacturers and their respective distributors believe that the greatest demand for CCTs will come from new installations and not from displacements of existing pay telephones. (There are approximately 1.5 million pay telephones currently in place.)

The other interest is that of the retailers/entrepreneurs (primarily vending concerns and large franchised retail operations) and the competing long distance carriers which seek to compete for the revenues of the telco's most lucrative locations, such as airports, public depots and convention sites. Competition for these markets will be aggressive with the result that there will be more losers than winners. The greed and recklessness with which these vendors are likely to try and penetrate the established telephone industry's pay telephone business poses a significant threat to the near term future of pay telephone competition at the state level.

Perhaps in the belief that a CCT market would never be approved, manufacturers have been slow to respond with coin products adapted to operate with conventional (i.e., non-public service) telephone lines or behind PBX systems. Pay telephones, coin or coinless, intended to be used with conventional lines or PBXs must be modified to provide automatic coin return, ensure free and/or unrestricted access to "411," "911" or "0" operator services without risk of incurring charges for unauthorized or fraudulent toll calls, and to meter usage and coin deposits without assistance from central office or toll service equipment. In addition to satisfying these basic technical requirements, new CCT product designs include: LED time and charge displays; built-in automatic or direct access to 911 Emergency Service, alternate long distance carriers, or special service numbers (e.g., hotel reservation services); aesthetically enhanced desktop and compact wall mounted models in colorful or wood grain housing; portable or cordless pay telephones; and coinless products that accept dollar bills or bank credit cards.

As to the existing level of competing carrier involvement in this market, ATT Communications lost its bid in the MFJ reorganization proceedings to retain ownership of its "Blue Phones" or the Charge-A-Call phones. Judge Greene ordered that these should be retained by the BOCs on the basis that they would be used extensively, if not predominantly, for intraLATA toll calling. ATT Communications responded with two new products: The first was its magnetic stripe reading Calling Card coinless phone with LED for displaying operating instructions. Its second product consists of a Genesis II electronic station modified to serve as a desk model Charge-A-Call phone with LED display and direct access to customer designated preselected service numbers, such as a reservation center. ATT Communications has recently announced sales or service arrangements involving this product with the Hilton and Marriott hotel chains.

At least one BOC reacted to ATT's reentry into the pay telephone market by refusing to provide access lines between the ATT phone installations and its TSPS centers. Judge Greene rescued ATT by ordering that Pacific Telephone and the other BOCs are required under

the MFJ to provide necessary access lines to all interexchange carriers and non-carrier customers at least for use with coinless pay telephones. As to coin telephones, this order simply deferred to the relevance of the FCC's registration program discussed below.

ATT's further involvement with pay telephones, however, is still uncertain. Tonka Tools has challenged the lawfulness of ATT's pay telephone activity. Tonka argues that under Computer II ATT is precluded from offering these products, either on a bundled or unbundled basis, with long distance service, except through a separate subsidiary. Clearly, the recent ATT Communications pay telephone transactions with the Hilton and Marriott hotels are classic examples of the kind of unfair CPE marketing advantage that the Computer II scheme was supposed to protect against.

MCI has also attempted to enter this market, albeit in a rather lackluster way. At airports in a half dozen major cities MCI has followed ATT's approach and installed coinless phones that record the customer billing information off the magnetic stripe on standard VISA or Master Charge bank cards. These phones are costly in that they require direct connections to a call processor located either on premises or at a remote central site for charge card verification and accumulation of charge detail. And their most serious limitation is obvious — they can be used only by credit card customers.

The BOCs, meanwhile, have attempted to head off these kinds of carrier developments by introducing a variety of charge-type pay stations that provide direct access to the carrier of the user's choice. For example the "Gold" phone at Denver's Stapleton airport directs a user to dial a two-digit prefix to access a selectable interexchange carrier. Other versions employ autodialers and touchkeys. This response is unlikely to prove successful. The phones are confusing to operate, do not accept coins, and require that the user have established some prior customer relationship with the carrier of his or her choice.

Although the common carriers appear to be only current providers of card reading and Charge-A-Call type coinless pay telephones, there are no legal or technical barriers to such phones being used or deployed by non-carrier entities. In fact the FCC has recently granted Part 68 registration to these devices as CPE such that they can be directly connected to public switches or special service facilities by any ordinary customer. But in all likelihood coinless, card reader, pay stations are likely to amount to a mere fad — a fad which, like Rotelcom's dollar bill phone, was artificially contrived as a means of avoiding a confrontation with the established telephone industry over whether competition should be permitted in the only true and realistic pay-as-you-talk market — the market for coin activated services.

Customer ownership of coin activated telephones is what the market appears to want; and the opportunity for some is now here and for other it will come before the year is out. As I mentioned above, Tonk-A-phones were being disconnected as fast as they were being installed for allegedly being illegal either under the tariffs or the FCC's registration program. It is likely that once the respective state and federal agencies are given a full opportunity to scrutinize these allegations it will become apparent that the BOCs' defenses are baseless. For example, most state tariffs do not contain, contrary to popular belief, a flat prohibition against the resale of local exchange service (Toll service, of course, is now generally resellable in virtually all jurisdictions.) Instead, most state tariffs simply contain a general limitation on "subscriber service," restricting its use to the customer and his employees, business associates, guests and tenants, but not mere patrons or customers. Also, this same subscriber use provision generally prohibits the installation of a subscriber line at any station location within the customer premises where it might be publicly accessible.

This latter restriction not only directly interferes with the use and interconnection of CCTs, but it is also the one that is most commonly violated by the telephone company itself in such locations as private clubs, lobbies of professional service providers (e.g., lawyers' and doctors' offices), and small retail establishments. It was also ruled to be patently unlawful nearly forty years ago by one state supreme court. In spite of these restrictions, there exists ample latitude under the tariffs within which to utilize CCTs. Among the most promising are situations where access to the CCT can be controlled and limited to employees (such as in a factory or a relatively closed office environment), or to residents and tenants, such as in a nursing home, shared residence or possibly an apartment complex. Hotels and lodging establishments enjoy even more favorable status in most jurisdictions because of express tariff provisions accommodating their resale of local service activity.

As a last resort but still untried, it ought to be permissible to connect CCTs to "toll only" trunks. This service is still available in many locations and affords a means of reselling intra- and interstate toll service without being limited by the general use restrictions applicable to subscriber line services. Florida, for example, recently denied applications to provide CCT service because the Florida Public Service Commission interprets its statutory scheme to limit all forms of local exchange service to the regulated, franchised exchange carrier. CCTs connected to "toll only" trunks would appear to overcome the PSC's objections.

The lawfulness of the telephone companies' application of its tariffed subscriber line use provision and their policies precluding connection of CCTs is currently under investigation in at least a dozen states. While two jurisdictions, Idaho and Kentucky, have tentatively rejected customer interconnection of CCTs on the basis of rather scanty and perfunctory hearings, Minnesota has cleared the way for a rational approach to the issue which is likely to set the pattern nationwide in the months ahead. The Minnesota PSC recently approved a tariff scheme by Northwestern Bell which expressly provides for customer use of CCTs. (This tariff evolved out of the Tonka complaint proceedings.) The most important feature of the Northwestern Bell tariff is that it limits CCTs to measured local lines for which a special declining rate structure was devised. Among other minor requirements, the new service is available only for CCTs which (1) provide both local and long distance service; (2) access all available long distance carriers; (3) provide free access to "911," "411" and "0" operator services; (4) conform to all standards for the benefit of the handicapped, and (5) are either FCC registered or connected behind registered protective couplers. In addition, the PSC is currently requiring that CCT owners file a perfunctory application with the commission and post a notice of their long distance rates at each phone.

The Minnesota PSC application requirement is unwarranted and the Northwestern Bell CCT rate structure is high and probably unprofitable for most installations. But both of these conditions can and will be changed in time. Meanwhile, even before this column is published other states are likely to follow close behind.

Second in importance to the Minnesota decision in the Tonka case is the FCC's recent reaffirmation that customer provided coin telephones not intended for connection to conventional public and semi-public services are registerable and entitled to the full protection of its Carterfone and Telerent interconnection policies. This recent decision granting, after nearly two years delay, registration of the Tonk-A-Phone dispelled the telephone companies' contentions that CCTs were not registerable and otherwise enjoyed no rights of interconnection. With this issue clarified it is now up to the states, one by one, to protect CCT interconnection rights under existing local tariff structures or entertain and

#### PAY-AS-YOU-TALK: CONTINUED:

approve alternative but reasonable telephone company proposals along the lines of that filed by Northwestern Bell. This process could be some time in coming in many states where either old line or new found resistance to competition prevails.

#### Conclusion

Regulators and telephone companies are just now awakening to the relevance of divestiture and deregulation to the creation of competitive opportunities and potential public benefits from competition in the coin telephone marketplace. And like them, large and small communications users will soon find many benefits and advantages to owning and installing one type or another of pay telephone product. These benefits are most likely to come in the form of reduced or controlled telephone costs, employee or patron convenience and privacy, or simply more attractive and functional products. On the other hand, we should not take lightly the fact that the telephone companies have generally lost money on their coin telephone operations. Those who believe that new CCT privileges will result in get rich quick opportunities are likely to be disappointed.

Victor J. Toth is a communications attorney in Reston, VA.

#### NOTE FROM THE EDITOR:

The above article, Pay-As-You-Talk: Fad or Fortune?, was Reprinted from BUSINESS COMMUNICATIONS REVIEW, July-August, 1984, pages 32-34.



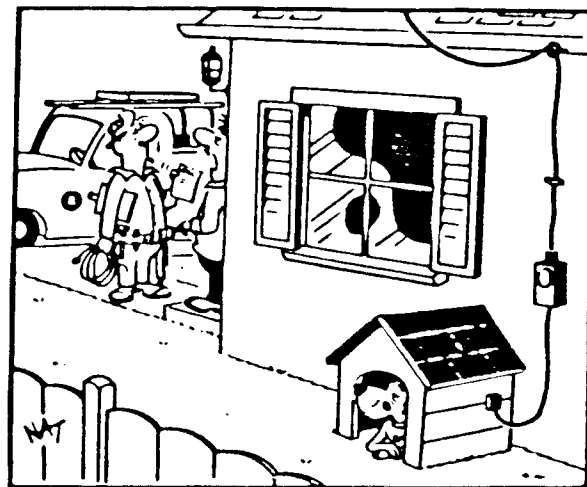
14th ANNUAL CONFERENCE

BANFF, ALBERTA, CANADA

**JUNE 30-JULY 4, 1985**

#### PROGRAM HIGHLIGHTS

- A full-day seminar: *Technical Comparison of Leading PBX Systems* and, as an alternative for newcomers to the field of campus communications, a one-day seminar: *Introduction to Telecommunications*.
- Technical concurrent sessions on *Fiber Optics—High Speed Data Transport; T-Carrier and Microwave; Packet Switching; Supercomputers; Cellular Radio* and, as an alternative for newcomers to the area of data communications, a six-session course: *Basic Computer Communications*.
- An in-depth look at *Cable and Wiring Considerations*, featuring a comparative evaluation of the *ATT and IBM Wiring Plans*.
- An examination of the communications alternatives associated with the PC and microcomputer proliferation phenomenon on campus.
- An evaluation of competitive *Long Distance* service alternatives.
- A look at *Maintenance* alternatives.
- A re-evaluation of the *Telecommunications Management* function, its interface with the data processing operations on campus, with upper management, and with the student body.
- CENTREX, Past-Present-Future.
- An update on the latest *Regulatory Issues* in Canada and the U.S.
- An update on the subject of *Telecommunications Management Information Systems*.



"WHAT EXTENSION PHONE?"

#### POTPOURRI

—Connie Gentry, Emory University

A funny thing happened to me on the way to installing our new phone system: I discovered I was actually enjoying myself! No, I haven't lost my marbles, (I hope), or turned into a masochist. The 14 hour days, constant decision making, daily crises, and never being able catch up with the endless reams of paperwork are not my idea having fun, but for the first time in a very long time I have found myself challenged and it's a very stimulating experience. I had almost forgotten that there is more to managing telecommunications than worrying about the latest BOC tariff filing or trying to figure out how to get a data circuit installed in less than 45 days or trying to coordinate service orders. On the other hand, maybe I've been working so hard I'm only hallucinating that I'm enjoying myself! At any rate, it's great to know that my brain cells haven't lost their elasticity!

The "Too Much of a Good Thing is Enough" Department - One of the crucial milestones in the installation of our SL-100 has been the need to have the new PBX facility and battery room ready by April 2 since the batteries were due to be delivered on that date and the switch a week later. Imagine my surprise (not to mention consternation!) on March 25 when I was told there was an 18 wheeler at my back door with the new batteries. Our Southern Bell ASD project coordinators handled the situation and the batteries went off to be stored until April 2. Wrong! Guess what showed up again 4 days later? Off they went again to be stored until the 2nd. Wrong again! April "one-th" arrived and so did the batteries, but this time we fooled 'em, we had the battery room ready. Well...we sure did fool 'em because this time they had no way to get the batteries off the truck into the battery room. I am pleased to say that after a major strategic consultation the batteries were installed.

Spring has arrived in Atlanta with a vengeance and the tulips, dogwood, azaleas, jonquils, etc. all seem to be trying to outdo each other in beauty. The sounds of Spring have arrived, too; bulldozers, jackhammers, picks and shovels, cement mixers, etc. I just love it! I never, ever thought the teeth rattline roar of a jackhammer would be music to my ears, but when it signals that my outside plant installation is moving along, it's as sweet as any symphony!

I have to go now; I've just received a phone call that there is an 18 wheeler at my back door with 1,500 telephone sets...which aren't due till July. I am enjoying myself, I am enjoying myself, I am enjoying myself.....See you next month (I hope!)



## TELEPHONE SYSTEM AT

### THE UNIVERSITY OF OKLAHOMA

Remembering a long-ago promise to write "after we get cut over" there appears to be little good reason to delay redeeming that promise. After all, our NEAX-22L has been in service since August 3, 1984. Surely we can now say that we are going to stay in business.

To refresh your memory, the University of Oklahoma signed a contract with Universal Communications Systems of Roanoke, VA in July 1983 for the installation of a 6500-line NEAX-22L, a 400-line NEAX-22VS, and \$1.2 million of new outside plant. I arrived in mid October, 1983 to assume responsibility for a project ready to get under way, the previous Telecom Manager having departed in the nick of time.

My staff consisted of Carla Schwartz, the switchboard supervisor for the old 701 Centrex and a clerk, 6-months pregnant, who was to depart in January. As slight additional difficulty the University was under a State-imposed hiring freeze, a malady which was to dog our footsteps throughout the project. I did manage to pick up two "temporaries", Kay Willinger and Teresa Parrish, now our Customer Service Supervisor and Maintenance Coordinator, respectively. Our task -- build a telephone company from scratch and have it operating by the end of July (we missed by 3 days, actually).

You may have noted that this ambitious project coincided with the well known (infamous?) divestiture period of post-January 1, 1984. With the ground shaky enough as it was, the industry confusion added a certain spice to our endeavor that really wouldn't be wished on the invading Russian force in Afghanistan. Southwestern Bell Telephone's legal staff, however, suffered from no such qualms, dragging the University through an endless series of regulatory hearings regarding service to students, the provision of long distance service, and even the right to own or operate a PBX (violated their local exchange monopoly, they claimed). This interesting tactic was somewhat successful, taking key people away from management of the project at critical moments but, having succeeded tactically, in the end the Bell lawyers lost the war, and the switch was cut rather uneventfully on August 3. We did have excellent cooperation from the working level Bell people throughout.

Some 2000 students immediately began making long distance calls, and shortly thereafter a long-delayed decision was made that we should do the billing and collections in-house, using service bureau software. We elected to use CMS of McLean, Virginia for our service bureau, with their function being to process the NEAX-22 event records into call detail format on mag tape. The tapes were then shipped back for processing on our IBM 3081 main frame by Phil Curry's crew at Merrick Computer Center.

Administrative billing was a simple matter of entering the charges to the accounts of the respective departments and crediting the account of the Telecom department. For students it was an entirely different matter. The bills were printed and delivered to the Bursar's office where Dave Shirley's hardy crew folded, inserted and mailed them and took in the money when students stopped by to make their payments.

The first three months of dealing with student problems was an interesting education in itself. We had elected to use a forced account code system to permit billing to the individual student. The students would also be able to use any dormitory telephone to place a call. We had expected that a few of the more adventuresome might attempt to learn and use billing codes other than their own, so we loaded every possible valid billing code into the switch to make the hunt as easy for them

as possible. That, we thought, would help minimize the number of calls made and charged to other student's billing codes. We also took the precaution of setting up a program to print out an exception list of billing codes used at extensions other than the one in the room to which the code had been assigned. In no way could we have been prepared for the fun and games which followed, however. Seemingly hundreds of students immediately began dedicated efforts to place calls using any possible method except with the assigned billing code. Within a 2-month period, the most enterprising member of the group had used more than 30 separate billing codes, running up a bill well over a thousand dollars. But the more incredible part of this tale is that our billing supervisor, Helen Dethrow, set up programs to track every one of those calls and successfully charge them to the correct student. We have identified the sum of \$14.72, total, in unbillable and uncollectable calls to date, quite a tribute to her efforts. Even our champion, with his 30 plus codes and a bill amounting to over a thousand dollars, has gradually reduced the outstanding amount to under \$300 through steady, painful payments.

That covers some points of interest on putting the switch into service. To answer some of the other questions we've frequently been asked, we can answer in the affirmative to all of the following:

- Yes, we have a dual microwave system installed, connecting the Main Campus and North Campus.
- We have bypassed the telephone company for 62 high speed, and low-speed dial-up, circuits and displacing \$160,000 annually in circuit costs.
- We were able to cut more than 50 trunks from the system while maintaining virtually unblocked calling.
- We are testing a voice mailbox system.
- We are installing another 27,000 feet of cable to add more than 1000 lines of married student housing to the system.
- Our automated directory system works well.
- We have interfaced our switch to the state educational TV microwave system to pick up voice circuits in the unused capacity.
- We have in-dial 800 service to replace collect and credit card calling for travelers.
- The system savings are exceeding projections at a rate of several hundred thousand dollars annually.
- We are doing all moves, changes and installations ourselves.
- The hiring freeze has been lifted.
- The installation team did a super job, headed by a dedicated engineer by the name of Cliff Parker.

And a couple of answers in the negative:

No, follow-on maintenance support has not lived up to the promises nor the standards set by the installation crews.

No, we aren't ready to take on any more such projects for a few more months. We're loaded with advice about planning for necessary support systems prior to cutover, however.

Since I always close with thanks to you for your early, useful advice Ruth, I'll do so once again. The moral support is quite a boost during a project such as this, and I'll try to get an update to you before another year goes by.

Written by Duane L. Olson, Manager-Telecommunications, University of Oklahoma in letter to Ruth A. Michalecki.





# AT&T Private-Line Tariffs Said To Offer Options, Risk

By Karen Lynch

FAIRFAX, VA. -- ATT Communications Inc.'s new private-line tariffs hold out to large users the promise of numerous network options--along with the possibility that determining the least expensive of those options will become a major undertaking and that service backlogs could take a turn for the worse.

That was the message given to members of the International Communications Association (ICA) in a recent video conference that was transmitted to 16 cities to explain the tariffs, scheduled to go into effect April 6.

The complexity of the distance-sensitive tariffs is perhaps their most significant feature, Lee Selwyn, president of Boston-based Economics and Technology Inc., told the meeting.

If the FCC approves the tariffs, telecommunications management would become much more complex and more important than ever before, Selwyn said. ATT customers to date have merely specified locations to be served, with no say in how the traffic is routed. Price has been determined by measuring the distance between rate centers and applying the appropriate schedule, he said.

Now ATT is proposing to unbundle the long-distance and local portions of its private-line offerings. "This unbundling provides customers with options and considerations that simply didn't exist under the old regime," Selwyn said.

A customer could still decide to buy end-to-end service from ATT, with ATT contracting with the local-exchange companies for the "last mile" and billing the customer for the entire link. ATT proposed rates for both long-distance and local connections, with local service-charges based on state-wide averages. The large majority of customers would probably continue to use this option, Selwyn said.

Under another option, ATT would supply the long-distance link and merely coordinate the link with the local telco at an extra charge. ATT and the local-exchange carrier would each bill the customer at their own rates.

A customer could buy the long-haul link from ATT and coordinate with the local telco himself for the "last mile." Or he could buy ATT's long-distance link and set up his own local connections through such alternative means as cable TV systems or microwave links.

Along with so many options comes a risk. The ICA is concerned that all the service modifications, additions and cancellations that could result from the new tariffs will aggravate service problems that now exist. "An unprecedented multitude of changes and orders will result," said ICA general counsel Brian Moir.

The ICA has asked the FCC to control the effective date of the new tariffs so that they will not needlessly exacerbate the service problems that have been plaguing users since the ATT divestiture.

Generally, the tariffs would reduce prices for the long-distance private-line facilities ATT provides by an average of 21 percent. But customers buying complete end-to-end service from ATT would face an average price increase of 7.6 percent, according to ATT, because the company would pass on the full cost charged by telcos for local private-line connections.

ATT's tariffs are likely to become even more complex, Selwyn said. He characterized the new tariffs as a step toward de-averaged long-distance rates and predicted the reintroduction of bulk pricing by ATT or other long-distance companies.

Because ATT has more switching centers than any other long-distance carrier, ATT will be able to charge lower rates in some areas. This will make ATT more competitive in suburban and rural areas than in urban areas, Selwyn said. ATT may thus be forced by market considerations to develop even more complex tariffs with route-specific pricing reflecting the level of competition--much like the structuring of air fares, he said.

ATT case manager William A. Fanslow said he didn't necessarily agree that the new tariffs are a step toward de-averaged pricing. "Only time will tell," he said, adding that ATT has no plans to change its uniform pricing policy at this time. In the long run, the marketplace will determine whether the uniform rate structure remained in place, he said. ATT has proposed to base rates for local connections in end-to-end links on state-wide averages, for example. A customer could save money by determining whether the local telco at either end of the long-distance connection charges more or less than ATT for the same local connection.

A customer with a sufficiently large amount of traffic could find it costs less to order a long-distance link from ATT and set up an alternative local link.

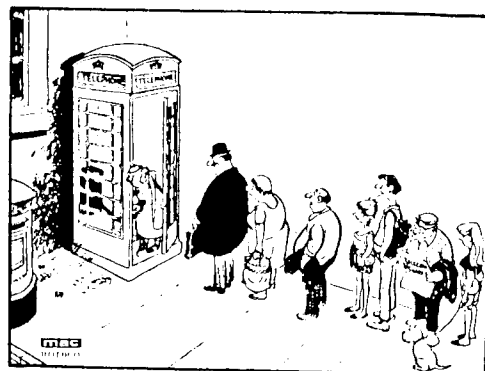
ATT may automatically route a customer's end-to-end service using the switch nearest to his premises. But that route may not be the least expensive if for example, it is to the east of the customer's premises and the customer's second location is to the west. The customer in this case might do better to contact the local telco for the link to the ATT switch of his choice.

The new tariffs' impact on each customer would differ depending on the characteristics of his network, Fanslow said.

But the tariffs could hit customers with multiple locations the hardest, he said, because their long-distance segments are often the shortest and they must pay the most access charges. Rates on shorter links would go up significantly in many cases, he explained, while charges for longer hauls would go down.

The new tariffs should go into affect April 6, as scheduled, or soon thereafter, Fanslow said. But ICA counsel Moir gave the new tariffs only a 50-50 chance of being implemented as early as the sixth.

ACUTA thanks Communications Week for the above article from April 1, 1985 issue, Page 36.



*"There's no point hanging about waiting--  
I've just bought this one."*



# FLORIDA ATLANTIC UNIVERSITY

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